

REMARKS / ARGUMENTS

Claims 1-2, 6, 9-14, 17-18, 21-25 and 28-35 remain pending in this application. No claims have been canceled or added.

35 U.S.C. §§102 and 103

Claims 1, 2, 25, 33-35 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto (U.S. Pub. No. 2002/0152339) in view of McGovern et al (U.S. Pub. No. 2005/0097260). Claims 6 and 28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto in view of McGovern et al, as applied to claims 1, 2, 25 and 33-35, and further in view of Brewer et al (U.S. Patent No. 6,336,163). Claims 9-12 and 29-32 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Yamamoto in view of McGovern et al, as applied to claims 1, 2, 25 and 33-35, and further in view of Achiwa et al (U.S. Pub. No. 2003/0009438). Claims 13, 14, 17 and 24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hoogterp (U.S. Pub. No. 2005/0210218) in view of Yamamoto and further in view of McGovern et al. Claim 18 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Hoogterp in view of Yamamoto and McGovern et al, as applied to claims 13, 14, 17 and 24, and further in view of Brewer et al. Claims 21-23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hoogterp in view of

Yamamoto and McGovern et al, as applied to claims 13, 14, 17 and 24, and further in view of Achiwa et al. These rejections are traversed as follows.

The present invention is directed to a storage system in which data in a particular volume can be protected against writing for a specified period of time. On the other hand, Yamamoto permits write access to stored data from a client which acquires exclusive access authority such as one issuing a SCSI lock command and disallows write access from other clients until the lock command is released. However, this is merely a file lock command. Access is not denied to stored data from another I/F such as the block I/F.

The Examiner comments that "it is inherent that if a logical volume or physical volume is protected at all, then it is protected for a specified period of time". The Examiner further comments that since "no exact period of time has been stated, any period of time (i.e. one second) meets the limitations of the claim".

Therefore, independent claims 1, 13 and 25 have been amended to recite that the file system protect request is directed to a particular logical volume with a specified period of time, that the particular logical volume is protected for the specified period of time and that a physical volume of the particular logical volume is also protected for the specified period of time. It is submitted that such an amendment clearly distinguishes between the file lock command of Yamamoto and the Write-Once-Read-Many (WORM) function of the pending claims. Independent claim 33 recites the protection of a file system. This claim has been amended to

recite that the request from the first server to protect the file system in the storage media is for a specified period of time. As such, it is submitted that this claim also patentably defines the present invention over the cited art.

The newly cited reference to McGovern et al disclose a WORM storage implementation in which a specified retention date is provided within a data set that is locked against deletion or modification. According to an illustrative embodiment, the retention date/time is calculated by querying the file's last-modified time prior to commit, adding the retention period to this value and thereby deriving a retention date after which the file can be released from WORM (see [0020]). The flow chart of Fig. 3 and paragraphs [0067] - [0086] disclose WORM volume creation while paragraphs [0087] - [0107] disclose WORM file creation. WORM-protected files should be moved to the WORM volume. However, not all files within the WORM volume are WORM files, and as such, the WORM volume is not truly a WORM-protected volume. Instead, retention periods can be set separately for each file stored in the WORM volume.

However, this is not the same as a file system protect request directed to a particular logical volume with a specified period of time so as to protect that particular logical volume for the specified period of time as in the present independent claims. (as well as the physical volume of the particular logical volume for the specified period of time as recited in independent claims 1, 13 and 25). This is particularly

advantageous to the storage system of the present invention in which access is made via two interfaces, namely one for file level I/Os and one for block level I/Os.

The deficiencies in Yamamoto and McGovern et al are not overcome by resort to any of the remaining references. These references are silent with respect to any file system protect request directed to a particular logical volume. As such, it is submitted that the pending claims patentably define the present invention over the cited art.

Conclusion

In view of the foregoing, Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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